

THE SIGNIFICANCE OF CROSS-FERTILISATION PRACTICES IN KISWAHILI TECHNICAL AND SPECIALISED TRANSLATIONS

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Abstract

As opposed to interpreters of verbal communication, translators of written texts have ample time for consulting, revising, reviewing, discussing, weighing and editing. That means cross-fertilisation with fellow translators, speakers of the language, subject experts, clients as well as text reviewers and/or editors helps them improve the translation process and minimize errors in the final translation. This paper is a practical study of English – Kiswahili translations aimed at showing that collaborative efforts across individuals, organisations, and institutions both locally and internationally can improve the overall translation process and product. The data for this study was collected through observation, documentary review as well as through interview and was then analysed through a comparative method. The discussion draws experience from legal and technical (i.e. computer and web-based) translation into Kiswahili, and further emphasizes that there are areas of improvement in Kiswahili translation and training for time and cost effectiveness. The paper argues that despite the importance of cross-fertilisation in the translation process, Kiswahili translators need to improve their expertise to include specialisations in certain fields.

Introduction

Translation into Kiswahili has been performed in a canonical approach whereby translators embark on whole text translation. When there is a specialised text, there is an involvement of a number of players such as subject matter experts, terminology specialists or linguists, speakers of the language, fellow translators, and sometimes the client. While this may sound expensive and time consuming, it is acknowledged that specialised fields such as medicine, legal, business, computer science, mathematics, and other natural sciences have no direct connection with translation (Cao, 2008). However, Karwacka (2014) argues that translation plays a very important role in knowledge mediation. Translators who are working in the area

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of specialised or profession knowledge are expected to have a considerable expertise in translation and in a given subject area. While this is true to well-developed languages (Malangwa, 2010) such as English, French, German and Spanish; Kiswahili translators are just experts of translation or pure linguists so to speak. It would sound ironical to ask for a medical or legal translator from Kiswahili.

According to Mwansoko, Mekacha, Masoko, and Mtesigwa (2006), translation as a field of study in Kiswahili, emerged in the 1980s and its development is very gradual. In the Kiswahili studies, Malangwa (forthcoming) acknowledges that translation theory and practice is taught as a subject from high schools through university levels. This implies that there are limited or no translation experts trained either for this activity or even in specialised areas. Kiswahili studies produce only linguists who have some elementary knowledge of translation theory and practice. When it comes to handling complex texts or specialised and technical texts, Kiswahili translators, who are generally pure linguists, are compelled to collaborate with various individuals, organisations and institutions.

The common practice, therefore, is that while Kiswahili translators are working with a specialised or technical text, they would co-work or consult specialists in that area, especially when they come across a new concept or term. This is what is referred to as cross-fertilisation in this article. According to *Webster Dictionary* the term cross-fertilisation refers to an interchange or interaction (as between different ideas, cultures, or categories) especially of a broadening, productive or beneficial in or interchange between different cultures. It is with this conception that the term cross-fertilisation is used in this article to refer to the interaction made by translators and experts to produce high quality translations. The purpose of this paper is, therefore, to make a situational analysis for the aim of exposing the types of cross-fertilisation in Kiswahili translation and their importance in the field of translation practice. The paper further calls for departure from some of the canonical practices that are not time and cost effective.

The Challenges of Translating into Kiswahili and Other African Languages

The challenges of translating technical and specialised texts from English into Kiswahili can be traced far back from the colonial period. The scientific and technological developments we enjoy today in the Kiswahili speaking communities and the African societies at large, originated from Western societies since their arrival as colonizers in the region. This presupposes also that modern science and technology from the West have reached Africa through European languages, especially through English. Historically, European languages have served as vehicles of formal education in Africa to the exclusion of local languages (i.e. African local languages). The colonial language and education policy in Africa fell far short of giving African languages a chance to evolve and develop into languages of scientific and technological discourse

and analysis (King'ei, 2000; Moeketsi, 2007). Moeketsi (2007) further argues that the official African languages still have low status as a means of communication even in this era of scientific and technological developments. The powerful and influential groups simply do not use these languages. In the education systems and economic spheres, African languages feature minimally or not at all. Most of the official crucial debates and conferences are conducted almost exclusively in English and other foreign languages while the African languages remain as low status means of communication. This has been the case since the onset of colonialism in Africa to post independence period.

Because of non-use in technical and specialised discourse, African languages are short of technical as well as specialised literatures and vocabularies or glossaries, a state of affairs which hinders their adoption as languages of technical discourse. Therefore, in any attempt to translate technical texts, translators face a number of constraints. One of them is the lack of ready equivalents in the target language (henceforth, TL) for the new words, terms and expressions as well as the new concepts and ideas. This lack is due to the absence of references or technical manuals written in the TL (King'ei, 2002). In the case of Tanzania, Malangwa (2010) argues that attempts have been made to translate technical texts from English into Kiswahili. In the actual practice, translators translate the texts using not only recognized translations but also apply other means of transfer, such as *naturalization*, *loan translation*, *using equivalent expressions*, *modulation*, *descriptive equivalents*, *calques* and *componential analysis* (Pinchhuck, 1977; Newmark, 1988; King'ei, 2000; James, 2002; Thriveni, 2002; Xianbin, 2005). This implies that due to the lack of such literatures they are forced to prepare or create equivalents by themselves in the process by using the techniques listed above.

Nida (1964) maintains that translating scientific materials from a modern Indo-European language into a language largely outside the reach of Western science is extremely difficult. In such a situation, the work of the translator becomes two fold. First, he has to develop the lexicon (i.e., through invention and creation) in order to express emerging needs from new discoveries, ideas and concepts. Secondly, he has to translate text units from the source language (henceforth, SL) to TL, which is in fact the application of the words and terms created. However, during these processes the translators need to interact with specialists from technical and specialised knowledge in order to obtain certain clarifications about technical expressions and on how to say better in the target language. They consult subject experts in order to download the concept contained in certain technical terms or expressions and in finding the appropriate equivalent term in the target language. This is what we call cross-fertilisation in this article.

Cross-fertilisation as a Translation Approach

Cross-fertilisation is a term used in the field of biological reproduction to describe the fertilisation of an ovum from one individual with the spermatozoa of another. The term has been borrowed and used in different fields with the same conception. In business, for example, cross-fertilisation is used to refer to mixing of the ideas, customs, and so forth of different places or groups of people to produce better results. The concept “cross-fertilisation” in the field of translation was brought by scholars such as Fischbach (1992). Fischbach argues that technical and literary translators can enrich (i.e. cross-fertilize) each other in terms of transfer techniques. He names it ‘sci-tech and literary’ translators’ invaluable *cross-fertilisation*. The type of cross-fertilisation emphasized here relates to sharing of translation techniques between translators of specialised and technical texts, especially in handling cultural expressions and technical terms or new words. However, translators of different text-types can as well share the target language (TL) terms or new words which they are creating in the transfer process. Malangwa (2010) expanded the concept and observed four types of cross-fertilisations in technical translation, namely cross-fertilisation with terminology developers, cross-fertilisation with subject experts or specialists, text-type cross-fertilisation and cross-fertilisation with fellow translators. In the four groups, text-types cross-fertilisation and cross-fertilisation with fellow translators are basically making reference to cross-fertilisation among the translators themselves. This paper also broadens the network in which the translators need to find interactions. There should be both intra-cross-fertilisation and inter-cross-fertilisation. By intra-cross-fertilisation reference is made to the cross-fertilisation within the field of translation. This includes sharing knowledge, skills, experience, and terms as well as vocabulary among the translators of different text-types, institutions, organisations, and nations. On the other hand, inter-cross-fertilisation refers to interactions with other groups other than translators, including linguists, term developers, subject experts, and the speakers of the language. These kinds of cross-fertilisation can minimize errors in the translation process and lead to better translation products.

Data Collection Methods

This study is purely descriptive in nature and uses a qualitative approach to analyze the data that was collected. The data for this study was collected through documentary review, observation and interview. The researcher reviewed a representative sample of technical and specialised translations from English into Kiswahili. The documents that were reviewed include computer science and legal texts translated under three projects, namely translation of TRA website, political parties’ legal documents as well as Microsoft and Linux (computer-based) translations. These were thought to represent technical and specialised texts because they are practical experience and have direct impact to the consumers as well as to the target language. The researcher used also observation technique to collect the data as she was part of the

two teams, among the three that translated the said documents. Through observation, the researcher managed to collect the translations by 'lay people' as well as those which were reviewed and corrected by the professionals. Through observation also, the researcher managed to see and learn how cross-fertilisation is useful in getting a good translation products and in handling technical terms. Lastly, the researcher had interview with 6 translators who participated in translating website, computer programs and the legal texts from English into Kiswahili (i.e. 2 participants from each project), and these were selected randomly. Through interview, it was easier to establish whether the translators of one project benefitted from the terms that were created by the translators of another project, especially with the translators of computer-based texts. The interview was both structured and unstructured. Denzing and Lincoln (1998) argue that interview is a valuable qualitative method in which the researchers must choose their own points along the continuum between structured and unstructured interviews. Within this continuum there are structured, semi structured and unstructured interviews. Generally, a combination of these three methods of data collection made the exercise meaningful and more informative.

Cross-Fertilisation in Kiswahili Technical and Specialised Translations

The nature of technical and specialised texts requires translators to have knowledge beyond linguistics. Talking about legal texts, for example, Cao (2008) argues that legal texts are texts in specialised area and has its own characteristics and specialised demand necessitated and dictated by the nature of language used in those texts. Legal texts are characterized by the use of long strings of which are rarely punctuated. Another characteristic of these texts is the use of legal terms that sometimes do not originate in that source language. This specialised language use, which deviates from the common writing systems, provides an important insight and lesson for translators, translation organizations, institutions as well as educational institutions. The decoding of message from such strings requires legal knowledge which sometimes needs a reasoned interpretation from lawyers themselves.

For years now translation of technical and specialised texts into Kiswahili has established a set of translation norms and, therefore, forms a unique translation system that needs to be studied. While the theory requires that translators of specialised texts to possess professional knowledge or knowledge of the subject matter (cf. Mwansoko et al, 2006), most Kiswahili translators lack this expertise in their trainings. Kiswahili translators are pure linguists and have no in-depth training in specialised knowledge and the technicality of language use in those texts. This calls for cross-fertilisation in a number of areas. Malangwa (2010) exposes the ways Kiswahili translators benefitted from consultation with computer experts during localization of computer programs into Kiswahili (i.e. during Microsoft and Linux translation). It should be

emphasized here that the kinds of cross-fertilisation experienced in Kiswahili translation goes beyond professional knowledge. Consultation with subject experts is just the beginning. Malangwa (*ibid.*) maintains that due to the nature of the language (i.e., a developing language), there are always signs of term proliferations. The cross-fertilisation needs also to be considered in other areas, such as in sharing of technical terms developed in the course of translation. This paper, therefore, discusses the forms of cross-fertilisation (i.e., both intra-cross-fertilisation and inter-cross-fertilisation) observed in Kiswahili translations and recommends some strategies for improvements. The following sections, therefore, critically review the situation in Kiswahili and highlight some measures or strategies to be adopted.

Types of Cross-fertilisation in Kiswahili Translation

Cross-fertilisation in Kiswahili translation is both rich and tedious. It is rich in the sense that there are many people, organizations, and institutions interested with translation and they are also ready to share their experience, knowledge and terms. On the other hand, cross-fertilisation in Kiswahili translation is tedious due to some issues raised in this article which include embarking on whole text translation and unnecessary consultation with subject specialists which would be minimised through the use of modern technology. The subsections below discuss the types of cross-fertilisation observed in Kiswahili translation and they make some recommendations for improving translation practice in Kiswahili.

Cross-fertilisation with Subject Expertise

It has been noted above that there are two types of cross-fertilisation in the subject expertise that can be adopted for the aim of improving the process and the product. The first one is the requirement for translators to acquaint themselves with some knowledge in one or more of specialised knowledge in order to be able to handle specialised texts (Garcia, 2009). This helps to have, for example, medical translators, legal translators, technical translators and business translators. The second approach is to make consultation with subject experts when translators come across a technical term for the aim of obtaining clarifications from the experts in the area (Mwansoko et al, 2006; Malangwa, 2010; Malangwa & Chabata, 2012). Most Kiswahili translators adopt this second approach while handling technical and specialised texts. In the interview with Kiswahili translators it was observed that there are no translators into Kiswahili who have specialised in technical areas.

In handling specialised texts into Kiswahili, translators usually co-work with subject experts in the translation process for the aim of minimizing errors in the translation product. Translation errors, such as distortion, over-translation, under-translation and omission (Cao, 2008; Malangwa, 2008) may occur due to misinterpretation of certain concepts in the text. Another cause is a failure to download or upload the

concept entailed in the new word or term. Two case studies are used here to discuss this kind of cross-fertilisation. The first one is the translation of legal texts while the second is the translation of computer-based or web related texts. Both translations were from English into Kiswahili. The researcher participated in the translation process of these texts and therefore, the data presented here is from that practical experience.

Legal texts translation involved electoral laws in Tanzania whereby the client, the Office of Registrar of Political Parties, decided to form a team of translators and lawyers from government institutions. The idea behind was to have a translation product with minimal errors. As noted earlier, there were no legal translators in Kiswahili who would handle these kinds of texts. The client had to hire for a venue and incur all costs to facilitate this exercise. The team was very rich in terms of expertise; it included participants from the office of Attorneys General, Office of the Political Parties Registrar, The National Kiswahili Council (commonly known as BAKITA- Baraza la Kiswahili la Taifa) and the Institute of Kiswahili Studies (commonly known as TATAKI- Taasisi yaTaaluma za Kiswahili) of the University of Dar es Salaam.

In handling the exercise, they all acted as translators whereby everyone was assigned a portion to translate. After a given time, all translations were projected one after another for review and discussion. Lawyers had a role of clarifying legal concepts in certain terms and strings while the translators had a role of polishing the language and developing terms which did not exist in the target language. It was costful and time consuming but the final product was very impressive. The translators (the team) acknowledged that the presence of them all was very important in the process and the final product.

Under the guidance of lawyers who participated in the process, for instance, the following strings were polished as follows:

Table 1: Sample of Polished Strings Related to Electoral Laws in Tanzania

No.	SL String	Layman's Kiswahili Translation	After Consultation with Lawyers
1.	Every office bearer shall be guilty of an offence	Kila <i>mwenye ofisi</i> atakuwa ametenda kosa	Kila <i>kiongozi</i> atakuwa ametenda kosa
2.	... and shall be liable <i>on conviction</i> to a fine...	... na atawajibika kulipa faini...	... na atawajibika <i>akitiwa hatiani</i> kulipa faini...
3.	The appropriate party organ	Chama sahihi	Chombo sahihi cha chama

4.	In accordance with the procedures stipulated in the Constitution	Kwa <i>kuzingatia taratibu zilizomo</i> kwenye Katiba	Kwa <i>mujibu wa taratibu zilizoelezwa</i> kwenye Katiba
5.	The provisions of Regulations 4 and 5 shall apply <i>mutatis and mutandis</i>	<i>Maelezo</i> ya Kanuni ya 4 na 5 yatatumika <i>mutatis and mutandis</i>	<i>Masharti</i> ya Kanuniya 4 na 5 yatatumika <i>kama yalivyo</i>
6.	... shall state the amount of funds intended to be apportioned to candidates sponsored by that political party.	... ataeleza kiasi cha fedha <i>kinachotolewa kwa kila mgombea anayedhaminiwa na chama cha siasa</i>	... ataeleza kiasi cha fedha <i>kilichotengwa</i> kwa ajili ya wagombea wa chama hicho cha siasa.
7.	Non-disclosure of funds by a candidate or political party...	<i>Ufichaji wa fedha kwa mgombea au chama</i>	Kutotoa taarifa za fedha kwa mgombea au chama cha siasa...
8.	Set out in the Third Schedule	Iliyoelezwa katika <i>Kielezo cha Tatu</i>	Iliyoelezwa kwenye Jedwali la Tatu

Source: Researcher, 2015

In reviewing these translations, it was evident that Kiswahili translators who were not lawyers sometimes failed to translate certain legal expressions and therefore altered the message. As highlighted in the texts presented, there was misinterpretation and therefore mistranslation in the strings number 1 whereby the term *office bearer* was literally translated as *anyone who is allocated an office* (i.e., any staff member), in number 5 the term *Provisions* is under-translated as just *explanations (Maelezo)*. Other distortions are observed in the strings number 6, 7 and 8 as marked above. On the other hand, some strings were omitted or not translated in the TL. For instance, in translating string number 2, the italicized words in the SL text were omitted in the TL while in translating string number 5, *mutatis and mutandis* was not translated in the TL. Such problems, if not handled properly during the translation process, may have direct impact to the translation product and in that regard, cross-fertilisation was very important.

In addition, by involving lawyers in the translation process, the lawyers advised that in most cases legal texts require literal translation and a minimal use of communicative translation. The literal translation was emphasized for the aim of maintaining legal stylistic features in the texts. As Cao (2005) argues, legal texts are known for their rounding expressions which require legal knowledge to handle them. However, in some cases the application of communicative translation was imperative in order to communicate the SL concept in the TL text. See for example in the following translations:

Table 2: Sample of Communicative Translation

No.	SL Term	TL Term
1.	Election Manifesto	Ilani ya uchaguzi ya chama cha siasa
2.	Undue advantage	Faida isiyostahili
3.	Act of Omission	Kuacha kutenda
4.	Law Review Officer	Afisa Mrekebu wa Sheria
5.	Registered Party	Chama chenye Usajili
6.	Shall be in duplicate	Itakuwa kwenye nakala mbili
7.	Provisional Registration	Usajili wa Muda
8.	Full Registration	Usajili wa Kudumu
9.	Object and reasons	Madhumuni na sababu

Source: Researcher, 2015

From the data presented above, it is evident that some translations are somehow long compared to their SL counterparts as in number 1, 4, 5, 6 and 8, while few others are short such as in number 3. In addition, these translations are a result of interpretation from the experts which helped to obtain actual translations of the message from the SL term.

The second case study is the translation of technical texts (i.e. computer programs and web based materials or texts) into Kiswahili. Recently, TATAKI was consulted to translate Tanzania Revenue Authority (TRA) website into Kiswahili. In forming the team of translators, TATAKI considered to involve Information Technology (IT) personnel from TRA to assist with the clarifications of certain concepts and terminologies. The inclusion of IT specialist in the team was very significant. The specialist helped to clarify, among other issues, web-based terminologies, the nature of terminologies to be created in terms of their length, and the familiar ones used by TRA in order to avoid duplications and/ or terminological confusion (i.e. the existence of more than one terms referring to one concept). In the translation process, translators as well as the experts shared portions of the texts for translation and, thereafter, projected the translation for review and modifications.

In addition to the inclusion of IT personnel in the team, there were web information from different specialisations (e.g., legal, business and accounting) which required experts in those areas. The plan was that after the team of translators had finished translating, there would be a plenary discussion with other experts from the subject areas for the aim of improving the translation. It was acknowledged that, although it consumed a lot of time, the combination in the teams was very productive and important in the translation process and product.

Malangwa (2010) discusses the handling of computer programs by Microsoft and Linux (Open Source Program) whereby both programs formed a team of translators who included computer experts and translators from BAKITA and TATAKI. In the process, the technical terms were extracted and presented to computer experts for interpretation before their translation into Kiswahili. In addition, the clients extracted some technical terms which were considered to be trademarks, and therefore, were retained throughout the translation. For quality assurance purposes all translations were reviewed and improved in the plenary sessions. In addition to that, two reviewers (a translator and a computer expert) were assigned to harmonise the translations before they were handed to the client. This kind of cross-fertilisation helped to enrich the translation process and improved the product.

Cross-fertilisation with Fellow Translators

Kiswahili translators enrich each other in different ways. First, Kiswahili translators especially from Kiswahili institutions collaborate in handling various projects through team works and interactions. With reference to the projects mentioned in 3.1, the team of translators which was formed involved members from different institutions. For Microsoft and Linux programs the translators were from BAKITA, the then Institute of Kiswahili Research (commonly referred to TUKI-Taasisi ya Uchunguzi wa Kiswahili) and the then Kiswahili Department of the University of Dar es Salaam.

Furthermore, in the translation of the legal documents from the Registrar of Political Parties' Office, the team of translators in the aspect of language specialists had members from TATAKI and BAKITA. The collaboration of translators from these language bodies helped to enrich the translation process and product due to sharing of knowledge and experience. In their collaboration, translators shared terms and new vocabularies which are always formed in the course of the day to day translation. It should also be noted that in the localization of Microsoft programs, the ground work for terms creation involved translators from Kenya as well. As Bogers and Horst (2014) maintain, innovative solutions are inspired and developed through the process of cross-fertilisation of ideas, rather than narrow focused approach. The cross-pollination of translators from different institutions has helped to minimize terminology problems in the translation process and product across Kiswahili language borders. Translators who are working in the same area need to crossfertilise by exchanging new terms that are created during their translation practice. Working in isolation may lead into the problems of terminological confusion. A good example is the variation of terms during the localization of Microsoft and Linux programs into Kiswahili whereby the translators did not collaborate. The Table below show terminology variations between the two projects:

Table 3: Samples of Kiswahili Terminology Variations in Technical Translation

S/No	Computer Program Term	Microsoft Translation	Linux Translation
1.	Password	Nenosiri	Nywila
2.	Computer	Ngamizi	Kompyuta
3.	Internet	Tovuti	Intaneti/Mdahalishi
4.	Search and replace	Tafutiza na badilisha	Sachi na badilisha
5.	Cache	Kirudufu data	Kache
6.	Cursor	Kielekezi	Kasa
7.	Full screen	-a kiwamba kizima	-a skrini nzima
8.	Format	Umbizo	Fomati
9.	Search engine	Mtambo tafutizi	Injini tafuti
10.	File	Jalada	Faili

Source: Malangwa, 2010

The key reason for these variations is the lack of collaboration between Kiswahili translators during the translation and localization process of these programs. There was no consultation among the translators from the two teams despite the fact that both projects were handled in Tanzania and involved members from almost the same institutions. The team members of these projects were consulted individually instead of consulting a specific institution. As a result, each team worked independently from the other. This affected negatively their products as they had varied terms for one SL term. This was also caused by the fact that the translators from each project employed different translation techniques. For instance, while KL translations employed more naturalization as in *search-sachi*, *internet- intaneti*, *computer-kompyuta*, Microsoft, on the other hand, employed loan technique and recognized translations as in *internet-tovuti* and *computer-ngamizi* as well *seach-tafutiza*.

This article argues that if there is collaboration among translators, these variations could be minimized. All translators would agree to adopt one term and employ in all their translations. This differs from Baker and Malmkjær (2005) and Malangwa (2010) who argue that co-existence of many translation techniques for terms creation is the source of terms variations in the TL. They have a feeling that in terminology development, there are several techniques for terms creation. These techniques are usually employed simultaneously or sequentially and often give rise to several alternatives or competing terms. While this is true in the beginning of the exercise, it could be controlled through sharing of new developed terms among the translators in the language.

The team of translators who worked with TRA web documents benefited significantly from the terms that were developed during Microsoft and Linux localization into Kiswahili. The TRA translators were able to consult Microsoft and Linux translators who were able to share a list of TL terms and, therefore, helped to work smoothly in the translation process. In addition, some translators from these two projects were

invited in the TRA project for them to share their experience and enrich the team. This kind of sharing is imperative especially when handling technical and specialised texts.

Cross-fertilisation with other Language Experts

Apart from interacting with fellow translators, Kiswahili translators benefit also from other language experts. These include but not limited to Kiswahili lexicographers, teachers, lecturers/instructors, terminology developers and other Kiswahili linguists. These groups are always coining new terms and vocabulary for their day to day use. When translators come across new concepts or term before coining a new one, they may begin with consulting other language experts. This is a common practice in Kiswahili translation. Translators from BAKITA, for example, would make a call or send a message to lecturers from TATAKI asking whether they have coined a term in the TL which they are looking for, and *vice versa*.

Furthermore, Kiswahili translators have to cross-fertilise with terms developers. Pinchuck (1977) argues that there should be cross-fertilisation between the translators and terms developers. This is important in the translation process as it helps to create acceptable terms in accordance with terminology principles and techniques. In addition, there is a direct or indirect cross-fertilisation between translators and terms developers, especially on the application of certain techniques and methods of translating technical terms during the translation process. The principles and techniques used to create terms during the translation process have a correlation with those used by terms developers. In such a situation, Kiswahili translators sometimes involve or consult terminology developers for more knowledge. On the application of terminology principle, for instance, translators have to learn the best principles for coining a new term. Mwansoko (1990) quoted in Malangwa (2010) mentions two principles which have been established in the literatures and used in coining the new terms, words and expressions in Kiswahili. These are:

- i. To look for a Swahili equivalent which has the same meaning as the new term, words or expression, and
- ii. If a Swahili equivalent was not found, then the experts responsible can:
 - a) Coin a new term using inherent Swahili resources
 - b) Borrow the term from non-standard Swahili varieties
 - c) Borrow the terms from another Bantu language, or
 - d) Borrow the term from English.

Translators should learn such principles and apply them while coining vocabularies, terms and expressions in the course of translating. This helps to create acceptable terms. Although translators coin terms for

immediate use, they may go further to study some principles for dissemination and standardization of the terms they create.

Cross-fertilisation with the Speakers of the Language

This may sound awkward but the reality shows that speakers of the language have their own linguistic struggle when a new term or concept emerges in their language. They are usually the first one to fill the gap of vocabulary or terminology during their interaction. Translators sometimes ignore this and create a new term but consequently, it has been observed that sometimes it ends up having two or three terms competing in the language system. This is evident in the field of computer knowledge and the following examples justify the situation:

Table 3: Co-existence of more than One Term in the Language System

No.	SL Word Term or Expression	TL Equivalent
1.	Computer	<i>Kompyuta, Tarakilishi, Ngamizi</i>
2.	Screen	<i>Skrini, Kiwamba</i>
3.	Cell phone	<i>Simu ya mkononi, selula, Simuseli</i>
4.	Home page	<i>Ukurasa masikani, Masikani, Gombo kaya</i>
5.	Search	<i>Tafuta, Sachi, Tafutiza</i>
6.	Page	<i>Ukurasa, Gombo,</i>
7.	Printer	<i>Printa, Kichapishi</i>
8.	Format	<i>Fomati, Umbiza</i>
9.	Flash	<i>Flashi, kinyonyi</i>

Source: Malangwa, 2010

From the data above, the TL terms presented here some were created during the translation of Microsoft and Linux while others were created by the speakers of the language for communication purposes. The listing of the TL terms here is based on what the Kiswahili speakers had before the translation of computer programs, followed by those terms which were created by the translators. It is argued here that before a term is created, it is important for the translators to do a mini research from the speakers of the language. This would minimize issues of terminological confusion or proliferation of terms in the language system.

The terms that are created by translators and terms developers in Kiswahili are accused of being difficult and unrealistic. Those who are developing them (i.e., translators and terms developers) do not consider the speakers of the language and consequently, the terms created are inconsumable. In the study by Malangwa (2010), the speakers gave examples of words, such as *Baobonye* (for *keypad*), *Nywilla* (for *password*), *ngamizi* (for *computer*), and *simuseli* (for *mobile phone*), which to them are very new and they sound strange, hence very difficult to remember in their daily communication. In other words, they are

not comfortable with the ways in which technical and specialised translations are handled. This calls for departure from linguistic based approaches to natural language approaches.

Is Cross-fertilisation a Solution to Kiswahili Technical and Specialised Translations?

Following the discussion above, it is evident that cross-fertilisation is very important when handling when handling technical and specialised translations from developed languages to developing or less developed languages. The experience in Kiswahili translation shows that through cross-fertilisation, translation processes and products were improved. However, this paper argues that Kiswahili translators need to be trained in specialised knowledge for cost efficiency. That means, we need to train and have Kiswahili legal translators, religious translators, medical translators, and so forth. Currently, there are unnecessary panels for terms extraction and discussion which consume a lot of time and money. This would be saved through the use of translators who have knowledge of the subject matter. Although this is useful for time and cost efficient, as Cao (2008) noted, there are some contexts whereby the translators need specialist interpretation for proper transfer. This calls for continuous cross-fertilisation with subject experts even in the presence of translators trained in that particular field of knowledge.

Conclusion

As a conclusion to the above discussion, the principle of cross-fertilisation in Kiswahili technical and specialised translations is very productive. It should as well be noted that there is no any field of knowledge that stands in isolation. There is always a network of interaction among different disciplines and within disciplines, which has been defined as inter-cross-fertilisation and intra-cross-fertilisation respectively. That also means, whether in the use of computer assisted translation, for instance, computer experts are needed to assist the translators who are of course not computer specialists. They would also need to consult an expert in the subject matter to assist with some technical elements in the text. This presupposes that cross-fertilisation is a living concept for better products in general, and better translation products in particular.

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